Claims

[c1]   A method for providing dynamic verification and alignment of production tool loadports in an automated material handling system environment, comprising:

transmitting light beams from a production tool loadport fixture to an overhead transport vehicle, said overhead transport vehicle mounted on an overhead transport rail;

reading values received from said light beams by a detector;

calculating an offset value as a result of said reading values;

adding an identification for said production tool to a tool map;

adding said offset value for said production tool to said tool map; and

compensating for said offset values without taking said production tool offline by aligning said overhead transport vehicle with said production tool loadport fixture in accordance with said offset value.

[c2]   The method of claim 1, wherein said tool map is stored internal to said overhead transport vehicle.

[c3]   The method of claim 1, wherein said light beams are

transmitted by a laser.

[c4]   The method of claim 1, wherein said detector is mounted on said overhead transport vehicle.

[c5]   The method of claim 1, wherein said detector is mounted on said production tool loadport fixture; wherein further said overhead transport vehicle includes a reflective device operable for reflecting said light beams from said overhead transport vehicle to said detector.

[c6]   A method for providing dynamic verification and alignment of production tool loadports in an automated material handling system environment, comprising:
transmitting light beams from an overhead transport vehicle to a production tool loadport fixture, said overhead transport vehicle mounted on an overhead transport rail;
reading values received from said light beams by a detector;
calculating an offset value as a result of said reading values;
transmitting said offset value to said overhead transport vehicle; compensating for said offset values without taking said production tool
offline by aligning said overhead transport vehicle with said production tool loadport fixture in accordance with said offset value;

adding an identification for said production tool to a tool map; and

adding said offset value for said production tool to said tool map.

[c7] The method of claim 6, wherein said offset value is transmitted to said overhead transport vehicle via a wireless modem.

[c8] The method of claim 1, wherein said detector is mounted on said overhead transport vehicle; wherein further said production tool loadport fixture includes a reflective device operable for reflecting said light beams from said production tool loadport fixture to said detector.

[c9] The method of claim 1, wherein said detector is mounted on said production tool loadport fixture.

[c10] A system for providing dynamic verification and alignment of production tool loadports in an automated material handling system environment, said system comprising:

an overhead transport vehicle transportable via an overhead transport rail;

a detector mounted on said overhead transport vehicle;

a production tool comprising a loadport, said production tool engaged with said overhead transport vehicle;

a loadport fixture mounted on said loadport, said loadport fixture including:

a plurality of light sources;

a communications means; and

control logic;

wherein said plurality of light sources transmit light beams from said loadport fixture to said overhead transport vehicle; and

wherein further said detector reads values received from said light beams and calculates an offset value operable for compensating for said offset value without taking said production tool offline.

[c11] The system of claim 10, wherein said communications means is a wireless modem.

[c12] The system of claim 1, further comprising a tool map associated with said overhead transport vehicle including delivery points for said overhead transport vehicle, said tool map storing:

a distance between production tools;

production tool identifications; and

production tool offset data.